DOCUMENT RESUME

ED 226 399 CS 504 122

AUTHOR Bridle, Mary J.; Frandsen, Kenneth D.
TITLE Consistency and Need-Fulfillment Theories as Predictors of Eye Contact Behavior in Low Self-Esteem Subjects in Response to Various Feedback Conditions.
PUB DATE Feb 83
NOTE 41p.; Paper presented at the Annual Meeting of the Western Speech Communication Association (Albuquerque, NM, February 19-22, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Behavioral Science Research; Communication (Thought Transfer); *Communication Research; *Eye Movements; *Feedback; Higher Education; Motivation; *Need Gratification; Performance; Predictor Variables; *Reliability; *Self Esteem
IDENTIFIERS Eye Contact

ABSTRACT

Consistency theory holds that persons are motivated to behave in ways that maintain a "steady state" cognitively and otherwise; need-fulfillment theory argues that people will act in ways that reinforce their sense of worth and enhance their self-esteem. While consistency theory predicts that low self-esteem persons will exhibit more eye contact when receiving negative feedback signals than when receiving positive feedback signals, need-fulfillment theory predicts just the reverse. Therefore, a study was conducted to test these opposing predictions. Eighty-nine subjects identified as having low self-esteem were divided into four experimental conditions in which they received combinations of positive and negative personal and performance feedback. Three data sets were generated through observation of eye contact behavior, an attitude questionnaire, and the generation of a set of variables examining whether subjects differentiated between performance and personal feedback. Analysis of eye contact data produced no statistically significant effects, while analysis of questionnaires did indicate effects for feedback. No significant effect was found for differentiating between the two types of feedback. These results provide only weak support for the eye-contact hypotheses and bring into question the choice of dependent variables. (Questionnaires used in the study are appended.) (JL)

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CONSISTENCY AND NEED-FULFILLMENT THEORIES AS PREDICTORS OF EYE CONTACT BEHAVIOR IN LOW SELF-ESTEEM SUBJECTS IN RESPONSE TO VARIOUS FEEDBACK CONDITIONS

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by

Mary J. Bridle
Queens University
Kingston, Ontario

and

Kenneth D. Frandsen
University of New Mexico
Albuquerque, New Mexico

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Kenneth D. Frandsen

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Submitted to

Communication Theory Interest Group
Western Speech Communication Association

CS504122

Consistency and Need Fulfillment Theories as Predictors of Eye Contact Behavior in Low Self-Esteem Subjects in Response to Various Feedback Conditions

This study extends previous research concerning the predictive power of two theories of motivation. The two theories under investigation yield opposing predictions about the communicative behavior of persons with low self-esteem. Specifically, the theories predict different patterns of eye contact behavior in response to feedback signals.

Consistency and need-fullfilment theories, as predictors of eye contact behavior in response to feedback signals, were compared by Greene (1978; Greene and Frandsen, 1979). Greene adopted a cybernetic view of mental and communicative processes and assumed that persons direct their behavior toward a goal state. He posited that eye contact performs a gatekeeping function, i.e., people make eye contact when they wish to receive signals from others and avert their gaze when they wish to avoid signals. Greene found that individuals with low self-esteem made more eye contact when they received negative feedback signals about their performance on a problem-solving task while individuals with high self-esteem made more eye contact in response to positive feedback signals about their performance. He concluded ". . . that consistency theory is superior to need-fulfillment theory in accounting for human nonverbal behavior."

The present study was designed to assess the relative superiority of consistency and need-fulfillment theories by investigating the eye contact behavior of low self-esteem subjects in response to four different combinations of feedback signals. The signals employed in this study combine both positive and negative feedback concerning performance and personal qualities, thereby providing a partial replication and extension of Greene's earlier work.

RATIONALE

Consistency and Need-fulfillment Theories

The theoretical position associated with the principle of consistency holds that persons are motivated to behave in ways that will maintain a "steady state" cognitively and otherwise (Festinger, 1957; Heider, 1946; Osgood & Tannenbaum, 1955; Rokeach, 1968). Thus, individuals will act "in accordance with the self-concept to maintain it intact in the face of potentially challenging evidence" (Rosenberg, 1979, p. 57). The generalized prediction from consistency theory to be tested in this study is that low self-esteem persons will exhibit more eye contact when receiving negative feedback signals than they display when receiving positive feedback signals.

The argument of need-fulfillment (self-enhancement, self-esteem) theory is that individuals will act in ways that reinforce their sense of worth and enhance their self-esteem through deliberate choice of activities and social roles. The generalized prediction from need-fulfillment theory to be tested in this study is that low self-esteem persons will exhibit more eye contact when receiving positive feedback signals than they display when receiving negative feedback signals.

Empirical Evidence in Support of These Theories

To test the predictive value of the two theories researchers have observed a variety of human behaviors. In a review paper Jones (1973) discusses research pertaining to self and interpersonal evaluations. The prediction from the need-fulfillment theory is that the higher the individual's evaluation of himself, the less his tendency to reciprocate evaluations from others, whereas the prediction from consistency theory is that the higher the individual's evaluations of himself, the greater his tendency to reciprocate evaluations from others. Jones concluded that the evidence he found in the literature tended to favor need-fulfillment over consistency theory.

Jones distinguishes between "warm" and "cool" studies (p. 197). "Warm" studies are those investigations in which the subjects are the focus of evaluation from the stimulus person. "Cool" studies, on the other hand, are investigations in which the subjects are not personally affected by the stimulus person. He goes on to say, "Since subjects [of "warm" studies] are to some extent the focus of actions having evaluative implications, such studies should be interpretable within the self-esteem theory framework" (p. 197). Conversely, "cool" studies should be interpretable within the consistency theory framework.

Krauss and Critchfield (1975) designed an experiment to test the hypothesis that the attribution behavior of subjects in "warm" conditions would be best accounted for by self-esteem theory and that of "cool" subjects by self-consistency theory. Interpersonal attraction was the behavior observed in this study. They concluded that ". . . self-esteem theory alone is sufficient to account for the attribution behavior of subjects in both 'warm' and 'cool' conditions" (p. 257). In their discussion they suggest that this result may not hold in all contexts. They suggest that the nature and source of reward may influence the attribution behavior of "warm" and "cool" subjects differentially.

In a critical review paper Dipboye (1977) examined the validity of Korman's Self-Consistency theory relative to self-enhancement predictions. He cites Korman's position as being "man is consistent and not self-enhancing" (p. 108). In criticizing this position Dipboye points out that a major source of ambiguity is that researchers have not tested the crucial self-consistency prediction that low self-esteem persons would seek consistency even at the costs of remaining in a dissatisfying occupation, failure, and other negative consequences.

Colman and Olver (1978) tested the two theories using reactions to flattery as a function of self-esteem. They posited that the two theories are not mutually exclusive and so set out to test the ". . . relative potency of the self-enhancement and consistency . . ." theories. The results of their study ". . .

provide umambiguous support for the cognitive consistency theory regarding the effects of flattery, since subjects of high self-esteem reacted with greater liking for the flatterer than did the subjects of low self-esteem who, for their part, tended actually to prefer the neutral evaluation" (p. 27). In discussing possible methodological problems the authors conceded that their results ". . . do not rule out the possibility of a concomitant (though weaker) self-enhancement effect."

Greene (1978; Greene & Frandsen, 1979) tested the need-fulfillment and consistency theories as predictors of eye contact behavior under varying conditions of feedback. As noted above his findings support the need-fulfillment theory with regard to high self-esteem subjects while he interpreted the data from the low self-esteem subjects as supporting consistency theory. Using Jones' "warm" and "cool" classifications, Greene's study is a "warm" one. His result is interesting in that it does not fully support Jones' contention that "warm" studies should be interpretable within the need-fulfillment framework.

It seems that the next logical step in investigating the predictive power of these two theories is to test them using low self-esteem subjects in a "warm" study using both positive and negative feedback conditions. In support of this notion Rosenberg (1979) suggests that if one wishes to test need-fulfillment and consistency theories one can only do so by using low self-esteem subjects since it is only with them one can clearly formulate opposing hypotheses. He points out, "If our self-esteem is high, then our liking for someone who thinks well of us, and our disliking of someone who thinks ill of us, may be due to our wish to maintain either self-esteem or self-consistency. It is only if we have low self-esteem that the two motives yield different predictions" (p. 60).

Conceptualization and Measurement of Self-esteem

The conceptualization and measurement of self-esteem is complicated by the fact that some authors consider the terms self-esteem, self-concept, and self-

image to be synonymous and interchangeable while other authors distinguish among them.

Silber and Tippett (1965) define self-esteem as the feelings of satisfaction a person has about himself as reflecting the difference between the self-image and the ideal self-image. This definition is based on the idea that each person has a concept of how he would really like to be--the ideal self. The individual whose self-image is near his ideal self-image is considered to have high self-esteem. Conversely, low self-esteem is found in individuals whose self-image is far from their ideal self-image. Turner and Vanderlippe (1965) also subscribe to this view of self-esteem.

In discussing the components of self-concept Wilmot (1979, p. 36) cites Duval and Wicklund's Theory of Objective Self-Awareness which specifies two states people experience: (1) subjective awareness is a state where a person is so involved in the environment or an activity that he is unaware of the self, attention is turned away from the self; (2) the second state is objective self-awareness where the person is able to examine himself. The self becomes an object in the environment and can thus be scrutinized and evaluated. Thus self-esteem is a product of self-awareness. Self-awareness is prompted by various situations. Wilmot (1979, pp. 37-38) specifies four: (1) whenever an unusual event happens, (2) whenever a person is reminded of being an object in the world, (3) whenever interpersonal events, such as anticipation of meeting someone, occur and (4) whenever one becomes aware of scrutiny from others.

Arguing from the symbolic interactionist view, McCall (1976) proposes that "a person does not have an identity but multiple identities" (p. 173). He outlines three areas of identity thus: (1) Role-identity which he defines as the person's ". . . imaginative view of himself as he likes to think of himself being and acting as an occupant of a particular social position. . ." (p. 173). (2) The Self, or social self, which he conceives as ". . . the organized set of

role-identities held by an individual" (p. 1974), and, (3) Character, which is ". . . that more salient subset of role-identities which the person strives to incorporate in his performance in a given situation which constitutes the character he seeks to assume in that situation" (p. 1974). Character, then, is performance related and is most directly involved in the interaction process. "Character is dependent upon both the performer and the audience; it is truly a social object" (p. 1975). If the person's performance in a particular role is convincing, i.e., consistent with and expressive of the desired character, then he is secure. Unconvincing performance leads to lack of acceptance of the person's character by the audience.

Fitts et al. (1971) specify three internal dimensions of the self: (1) The Identity self is concerned with the question "Who am I?" and the answer is concerned with social classifications such as name, sex, age, race, etc. (2) The Behavioral self is reflected in what the person does; this may include single behaviors such as walking, or more complex behaviors such as those involved in the execution of a particular job. (3) The Judging self concerns how the person feels about himself. The Judging Self observes the Identity Self and says, "well done" or, "I like you," or "I'm proud of you" (p. 17). Fitts goes on to say, "The Observing or Judging Self attends primarily to self-esteem as it views the Identity Self and Behavioral Self" (1971, p. 18).

Judgments about the self tend to be made on the basis of individual performances. Thus self-esteem is seen as relating to, and resulting from, judgments of the performance of the self in specific instances while self-concept is a more global entity which is the result of accumulated judgments over time. Wells and Marwell (1976) distinguish two underlying processes of self-esteem, namely, evluation and affection. They go on to say, "The distinction is somewhat problematic, since the two processes seem empirically related; a person's feelings about herself are bound to be significantly associated with her evaluations of

her qualities, abilities, and performances" (p. 62). They differentiate between the two as follows: "Self-evaluation generally involves more mechanistic, causal descriptions, while self-affection tends to elicit more "humanistic" conceptualizations of behavior" (p. 62). Other authors make similar distinctions (White, Gordon, Symonds, Gecas, Hollander, cited in Wells and Marwell, 1976, p. 62).

The two processes may occur because of feedback signals from different sources. If the evaluative component is based on evaluations the person receives about his performance in a variety of tasks, activities and situations, while the affective component grows out of evaluations the person receives about himself --for example, "you are a nice person, a good person" etc., then it is possible to identify two broad categories of communication or feedback signals which might affect self-esteem: (1) feedback signals regarding performance of a task or activity, and, (2) feedback signals regarding personal qualities.

Diverse conceptualizations of self-esteem have produced a variety of methods for its measurement. However, the most frequently used methods are based on the conceptualization of self-esteem as those feelings of satisfaction a person has about him or herself which reflect the relationship between the actual self-image and the ideal self-image. Two examples of this type of self-esteem measurement were selected for use in this study, namely, the Rosenberg Self-Esteem Scale (RSES) and the Tennessee Self Concept Scale (TSCS). The RSES is a global self-esteem measure consisting of a ten-item Guttman scale with a coefficient of reproducibility of .92 and a coefficient of scalability of .72. It is straightforward, easy to administer and score, and was used by Greene (1978; Greene & Frandsen, 1979). The TSCS consists of 100 self-descriptive items which form a series of sub-scales with reliability coefficients ranging from .75 to .92 (Fitts, 1965).

Conceptualization and Measurement of Eye Contact

Several investigations have provided evidence which either directly or indirectly supports the proposition that eye contact performs a perceptual

gatekeeping function. Kendon (1960) demonstrated that when persons seek feedback from others they make eye contact. Communicators look away more while speaking than while listening. Subordinates look more while listening to a superior than superiors do while listening to subordinates. Kleinke (1975) reported that persons avoided eye contact with people they disliked or felt uncomfortable in the presence of. Nielson (1964) found that "Looking away during listening indicated dissatisfaction with and qualification of alter's speech. Looking away during speaking indicated uncertainty with the statement or a modification of it. Looking at during listening indicated agreement or sheer attention. Looking at during speaking indicated interest in seeing the effect of the remark, and certainty" (p. 155). Collectively these studies certify the role of eye contact in selecting, filtering and receiving signals according to motives of the communicator.

Features of eye contact subject to relatively simple measurement include direction, duration and frequency of the communicator's gaze. The usual method of measuring eye contact, and the one employed in this study, requires an observer, who is seated behind a one-way glass, to judge when a communicator is actually making eye contact and to record the event on a device that will chart both the onset and termination of eye contract over time (Exline & Fehr 1978).

HYPOTHESES

Following earlier research (Greene, 1978) and on the basis of the preceding rationale, this investigation focuses attention on a series of hypotheses derived from the consistency theory perspective:

H_1 Low self-esteem subjects given negative performance feedback and negative personal feedback will display more eye contact behavior during the feedback than subjects who receive any of the other feedback conditions.

H_2 Low self-esteem subjects given negative performance feedback followed by positive personal feedback will display less eye contact behavior than those

who receive all negative feedback.

H_3 Low self-esteem subjects given positive performance feedback followed by negative personal feedback will not differ in the amount of eye contact behavior displayed from those subjects who received negative performance feedback followed by positive personal feedback.

H_4 Low self-esteem subjects given positive performance feedback and positive personal feedback will display less eye contact behavior than subjects who receive any of the other feedback conditions.

METHOD

Subject Selection

Both the RSES and the TSCS were administered to 599 prospective volunteer subjects in order to determine the most appropriate criterion for identifying subjects with "low self-esteem." Of the 599 persons who responded to these instruments, 501 completed both scales in a manner that provided usable data. In attempting to identify low self-esteem subjects, the total score on the RSES[1] and the nine sub-scale scores on the Positive sub-scale of the TSCS[2] were examined initially. Analysis of responses to these instruments yielded moderate and statistically significant correlations between the RSES and each of the nine P scores from the TSCS ranging from a low of .28 (RSES X Family Self) to a high of .50 (RSES X Self-satisfaction). However, only thirty of the 501 prospective volunteers provided scores on both instruments that clearly indicated low self-esteem. Fifty-two respondents provided scores on the RSES indicating "low self-esteem"; forty-six scored one standard deviation below the group mean on the TSCSP ($X = 346.86$, S.D. = 32.32) and the distribution of scores was negatively skewed. Consequently, persons with a TSCSP Total score of 320 or less were designated as the "low self-esteem" group. Using this criterion eighty-nine subjects were selected. This method included the thirty respondents who scored low on both instruments but excluded those who scored low on the RSES

and high on the TSCSP sub-scale. Of the eighty-nine identified in this manner, seventy-five indicated that they were willing to participate and sixty-six attended the initial session. For a variety of reasons, eleven subjects failed to provide usable data reducing the final subject pool to fifty-five.[3]

Feedback Messages

In order to test the hypotheses concerning eye-contact behavior of low self-esteem subjects in response to varying forms of feedback, messages were constructed to provide combinations of feedback regarding performance and personal qualities. Feedback concerning performance referred to the subjects' attempts to solve the Baseball Problem[4] while feedback concerning personal qualities referred to the subjects' cognitive ability and their commitment to Social Science research in general. Four versions of the message were constructed to include (1) negative performance, negative personal; (2) negative performance, positive personal; (3) positive performance, negative personal; and (4) positive performance, positive personal feedback. In addition to the four versions used in the data-gathering phase of the investigation, a "neutral" message was developed for use in the initial session during which base line eye contact measures were established for each subject.[5]

Interviewer and Observer Training

An interviewer was selected and trained to present the feedback messages and to serve as a point of focus for eye-contact by the subjects. The interviewer was trained to make eye contact with the subject as if they were engaged in normal conversation. When she averted her gaze, however, the interviewer was trained to look away no further than the top of the subject's head, the subject's chin, or to either side of the subject's head as far as the shoulders. In other words, the interviewer was trained to confine her gaze to an imaginary frame around the subject's head which permitted her to see the subject's eyes continuously either through direct contact or through peripheral

vision. This manner of gaze was selected in order to avoid constant staring that subjects might construe as threatening.

An observer was selected and trained to monitor the eye contact behavior of subjects during the interview sessions. The observer was trained to use an electronic strip-chart recorder to produce a permanent record of each subject's eye-contact with the interviewer. Preliminary training sessions employing a video taped simulation of a subject's eye contact behavior were conducted to establish the observer's reliability in performing his task.

Procedure

Subjects who agreed to participate in the study were assigned a code number to protect their identity and given two appointments one week apart. The subjects were divided into groups according to their scores on the RSES and then randomly assigned from these groups to one of the four experimental groups. This was done to ensure equal distribution of the RSES scores throughout the sample. The four groups were randomly assigned to the experimental conditions.

Each subject who attended the initial session was interviewed individually and received the same neutral statement. During the interview their base line eye contact scores were obtained. Immediately following this interview the subjects read and signed an Informed Consent Form, worked on the Baseball problem for approximately 15 minutes, answered three questions pertaining to their perception of their performance and degree of success on the Problem and completed a questionnaire regarding their feelings about participation in Social Science experiments in general and this experiment in particular.

One week later the subjects returned for a second interview during which they were given the feedback message to which they had been assigned. Their eye contact behavior was again monitored and recorded. After this interview they completed another questionnaire designed to monitor the effect of the feedback on their perception of their performance and to determine how they felt about

the interview and the experiment. The three questions appended to the Baseball problem and posed in the first session were embedded in this second questionnaire.[6] All interviews were videotaped.

The interviewer and subject sat directly facing one another, the distance between them being 1.5 to 2 meters. The interviews took place in a room with a one-way mirror. The interviewer sat with her back to the mirror. The observer was seated behind the mirror directly behind the interviewer so that he waa facing the subject.

The observer coded the eye contact behavior of the subjects on a Honeywell chart recorder, Electronic 19 model. The chart was marked in tenths of an inch and the speed was set to ten seconds per inch. The chart was in constant motion. When the subject made eye contact the observer depressed a button causing the pen to travel horizontally across the chart. The observer released the button when the subject broke eye contact, thus the eye contact data were converted to a permanent record. This kind of record was advocated by Argyle (1976).

Analysis of Data

The amount of eye contact each subject made during the initial and experimental interviews was calculated and expressed as a percentage of the total duration of the interview. The ratio of eye contact to no eye contact was also calculated and, since there was no significant difference between the sets of data produced by these two methods, the percentage was used in the data analysis.

To discover whether there were meaningful and significant relationships between any of the variables, correlation coefficients were calculated between all the possibly related variables in the data set.

With reference to the four hypotheses the differences in eye contact behavior for each of the four groups were calculated and analysis of variance carried out. To establish whether the subjects discriminated between performance and personal feedback a new set of variables was generated and analysis of variance carried out.

The data were also examined for evidence regarding the effect of the subjects' feelings toward the interviewer on their eye contact behavior; the effect of feedback on their perceptions of their success on the Baseball Problem; the effect of their feelings about the experiment on their eye contact behavior; the effect of their feelings about their performance on their eye contact behavior. In all the above cases, analyses of variance were carried out.

RESULTS

Three sets of data were collected in this investigation. The first of these was the eye contact difference scores for each subject. These scores were computed by subtracting each subject's eye contact duration score for the feedback interview (Experimental Eye Contact Behavior, E.E.C.B.) from the eye contact duration score for the neutral interview (Baseline Eye Contact Score, B.E.C.B.). This yielded the Difference in Eye Contact (D.E.C.) score. These data were treated by analysis of variance (D.E.C. Scores x Feedback Conditions) using the Statistical Analysis System (SAS), General Linear Model Program.

The second set of data came from the eleven item questionnaire which the subjects completed after the feedback interview. Using analysis of variance these data were examined for the effect of the feedback on the subjects' feelings toward the interviewer, the subjects' feelings toward the experiment, and their feelings about their performance on the Baseball Problem and their estimate of success on the problem. Three of these questions were responded to twice, once after completing the Problem and again after the feedback interview. To examine the effect of feedback on the responses to these questions, several new variables were generated and analysis of variance carried out.

The third set of data came from a set of variables generated to examine whether the subjects differentiated between performance feedback and personal feedback. Analysis of variance (D.E.C. Scores x Performance Feedback and D.E.C. Scores x Personal Feedback) were carried out.

Eye Contact Analysis

In order to test the four derived hypotheses it was necessary to determine whether different feedback messages had different effects on eye contact behavior. To do this an analysis of variance (D.E.C. Scores x Feedback Condition) was carried out. The results of this analysis indicate no statistically significant effect. The changes in eye contact behavior with the feedback conditions were much less than the standard deviation for D.E.C., i.e., the variability of the D.E.C. scores within the groups was much greater than the variability of the D.E.C. scores between them, yielding a low F value (F=.27).

Inspection of the initial difference in eye contact (D.E.C.) scores revealed the subjects who received Condition I (negative performance, negative personal feedback) made more eye contact than subjects who received any other feedback condition, but the difference was not statistically significant, thus H_1 was not supported. Subjects who received Condition 4 (positive performance, positive personal feedback) made less eye contact than subjects receiving any other feedback but, once again, the difference was not statistically significant, thus H_4 was not supported. Subjects who received Conditions 2 and 3 made less eye contact than those who received Condition 1 and more than those who received Condition 4 but the difference was not statistically significant. In addition there was a slight difference in the eye contact scores between the subjects in Condition 2 and Condition 3, thus both H_2 and H_3 were rejected. The difference between the eye contact behavior of subjects in Conditions 2 and 3 may indicate that they were attending to the performance aspect rather than the personal aspect; however, the difference was not statistically significant.

The D.E.C. scores for each condition were plotted as histograms. Inspection of these showed that the extreme values of D.E.C. in groups 1, 2, and 4 appeared to lie excessively far from the group means in relation to the standard deviations of the groups. In particular, the high standard deviations in the Condition 1 and Condition 4 groups were seriously influenced by the maximum values in these groups. The effect of these extreme D.E.C. values on the conclusions was investigated by applying a statistical criterion for excluding such extreme values from the analysis. The criterion is as follows: Given a sample of N observations, the N'th value is compared with the mean and standard deviation of the remaining (N-1). If the probability of obtaining a value this far, or further, from the mean of the other (N-1) values is less than 1/20N, the N'th value is excluded from the distribution and the analysis is repeated. In this way those extreme values which have a $< 5\%$ probability of occurring as often as once by chance in a sample of N observations (on the basis of the variance exhibited by the rest of the sample) are excluded. This process has the effect of filtering "excess" within-group variance out of the distribution regardless of its origin. In samples of the size used here the filtering process might be unduly sensitive to chance fluctuations in the estimates of the means and standard deviations. Tests of the filtering process using the 1/4N and 1/100N probability levels showed, however, that the results here are insensitive to the exact level of significance at which the extreme values are excluded.

Application of this criterion to the data permitted elimination of seven subjects from the data set, one from Condition 1, three from Condition 2, and three from Condition 4. Analysis of variance (D.E.C. scores x Feedback Condition) was repeated. Examination of these results revealed that elimination of the seven subjects with extreme scores had the effect of reducing the within-group error by almost two-thirds, and considerably increasing the F value (F=1.50), but the result was still not statistically significant (p = 0.22). The eye

contact data that resulted from the filtering process showed that the subjects who received Condition 4 made less eye contact than those who received Conditions 1 and 2. However, this difference was still not statistically significant thus H_4 was again rejected. Subjects who received Condition 2 made more eye contact than those who received Conditions 1 and 3 thus H_1, H_2, and H_3 were rejected. The filtering process had the most drastic effect on the variance within group 2. This may explain the above result where subjects in Condition 2 made more eye contact than those in Conditions 1 and 3. The unfiltered results indicate a trend toward support of hypotheses 1 and 4 while the filtering process had the effect of more strongly supporting hypothesis 4.

The Eleven Item Questionnaire

The eleven item questionnaire contained questions pertaining to the subjects' feelings about the interviewer, the experiment, and their performance on the Baseball Problem. Some of the items had negative wording and some had positive wording. Each item was scored on a seven point scale from 7 = "strongly agree" to 1 "strongly disagree" for the positively worded questions, and 1 = "strongly agree" to 7 = "strongly disagree" for the negatively worded questions. Thus a high score always represented a positive attitude.

As noted above, the questions concerned a) the subjects' feelings toward the interviewer, questions 3, 6, and 10; b) the subjects' feelings toward the experiment questions 1, 4, 5, and 9; and c) the subjects' perceptions of their performance on the Baseball Problem, questions 2 and 8. Question 11 asked the subjects to estimate the number of players they placed correctly on the Problem.

Questions pertaining to the interviewer were added together to yield a total score, P.Q.I. Questions pertaining to the experiment were added together to yield a total score P.Q.A. Finally those questions pertaining to the subjects' perception of their performance were added together to yield a total score P.Q.P.

Analyses of variance (P.Q.I. x Feedback Condition, P.Q.A. x Feedback

Condition, P.Q.A. x Feedback Condition, and P.Q.P. x Feedback Condition) were carried out. The results showed that the feedback had no effect on the subjects' liking for the interviewer ($F=0.61$, $p=0.61$). The results for P.Q.A. indicated that the subjects who received positive feedback evaluated the experiment somewhat more favorably ($F=2.56$), $p=0.06$). The results for P.Q.P. indicated that subjects who received positive feedback evaluated their performance more highly than those who received negative feedback ($F=4.83$, $p=.005$). The subjects who received negative feedback evaluated their performance much lower than those who received positive feedback. This result indicates that the feedback was effective in influencing the subjects' perception of their performance.

The subjects answered questions 2 and 8 twice, once immediately after completing the Baseball Problem and again after the feedback interview. To further examine the effect of feedback on the subjects' perception of their performance the questions were separated and a new set of variables was generated by subtracting the scores of the second response to these questions from the scores for the first response. Thus for question 2 there was a Better Than Most (BTM) score, and for question 8 a More Poorly Than Expected (MPTE) score.

Analysis of variance, (BTM x Feedback Condition and MPTE x Feedback Condition) were computed. Examination of these results indicated that the strongest effect was in the BTM score ($F=8.87$; $p=.001$). Subjects who received Condition 1 reduced their estimate while those who received Conditions 2, 3 and 4 increased their estimate. The same holds true for the MPTE scores but this result is not strong ($F=2.20$; $p=.1$). Both of these results indicate that the feedback was effective.

Finally the responses to question 11 confirm this conclusion. Question 11 asked the subjects to estimate their degree of success on the Baseball Problem. Again the subjects responded to this question twice. To test whether the feedback had any effect on their estimate of success a new variable was generated by subtracting the second response to this question from the first response,

yielding a Difference in Performance Estimate (DPE) score. Analysis of variance, DPE x Feedback Condition, was computed and the results indicate that subjects who received Conditions 1 and 2 reduced their estimate of success. Those who received Condition 3 increased their estimate of success and those who received Condition 4 did not change their estimate at all.

These results for Conditions 1, 2, and 3 confirm that the feedback was effective. The result of no change in estimate of success (Condition 4) is curious and may be explained by the fact that the subjects did not believe the interviewer. For example, Subject #26 had one of the lowest Total P scores in the group and her behavior (which was remarked upon by all the assistants in the experiment) indicated that her self-esteem was very low. She received Condition 4 (positive performance, positive personal) and had a very high DEC score. It is possible that she was staring at the interviewer in amazement and disbelief.

Another explanation for the no change in group 4 is that it occurred by chance. Inspection of the individual raw scores for this question indicated that only five subjects actually changed their estimates, three increased their estimate, and two decreased it. Clearly the absence of statistically significant results for the Difference in Eye Contact behavior cannot be explained by a failure of the attempt to manipulate the feedback messages.

Performance versus Personal Feedback

To determine whether the subjects differentiated between performance and personal feedback, new variables were generated so that Performance 1 referred to negative performance evaluation and Performance 2 referred to positive performance evaluation. Likewise Personal 1 referred to negative personal evaluation and Personal 2 referred to positive personal evaluation. Analyses of variance (Performance x D.E.C., and Personal x D.E.C.) were carried out. Inspection of the data revealed that there was no statistically significant effect. However the values for performance feedback were higher than those for personal feedback,

thus it was concluded that there was a tendency for the subjects to attend more to the performance feedback. But, since this trend was not statistically significant, there are several possible explanations for it.

First, self-esteem is the product of the evaluative process and is closely related to performance. Thus it might be expected that subjects with low self-esteem will tend to focus more on feedback pertaining to their performance. A second explanation concerns the fact that the subjects were all undergraduate students and, as such, they were very performance oriented and tended to focus on feedback pertaining to it. When the results of this study were presented to the classes from which the subjects were drawn several individuals pointed out that the subjects may have felt that the interviewer was not in a position to evaluate their personal characteristics on the basis of the small amount of information she had about them, thus the personal feedback was not perceived as credible so they paid less attention to it.

An additional finding from these data concerns the fact that the values for the negative feedback in each condition (i.e., Performance 1 and Personal 1) were somewhat higher than those for the positive feedback in each condition (Performance 2, Personal 2). Again the results were not statistically significant, thus it can only be concluded that the subjects tended to attend more to the negative feedback. The order of presentation of the feedback messages may have contributed to these findings.

Other evidence in support of the contention that the subjects attended preferentially to performance feedback is found in the analyses of questions 2 and 8 on the eleven item questionnaire. Recall that the scores for these questions were added together to yield the PQP score and analysis of variance (PQP x Feedback Condition) was carried out. It was clear from inspection of the results of this analysis that positive feedback had a significant effect upon the subjects' perception of their performance ($F=4.83$; $p=.005$). The subjects

who received the all negative feedback condition evaluated their performance much lower than those who received the all positive condition. It appears that those who received Condition 2 did allow the positive personal feedback into their perceptual field but not to a great extent. Subjects who received Condition 3, on the other hand, appear not to have heard the negative personal evaluation; this supports the suggestion that the subjects paid more attention to the performance feedback.

Other Findings

Correlation coefficients for all items in the data set were computed. There were small but significant correlations between the Baseline Eye Contact Behavior (B.E.C.B.) score and the Family (r=.41), Social (r=.34), Identity (r=.34), Behavior (r=.30), and Total P (r.-37) subscale scores of the Tennessee Self Concept Scale. This correlation was not present between the Experimental Eye Contact Behavior (E.E.C.B.) score and the above TSCS subscale scores.

DISCUSSION

In an earlier study Greene (1978, Greene and Frandsen, 1979) demonstrated a difference in communicative behavior between people with high self-esteem and those with low self-esteem. His results indicated that while the former accepted positive feedback about their performance, the latter not only rejected positive feedback but attended to, and accepted negative feedback about their performance.

In both cases the subjects accepted communications consistent with their self-image. The effect of accepting negative feedback on low self-esteem subjects is to perpetuate the low self-esteem state, thus the subjects' behavior leads to a self-fulfilling prophecy. Realization of this fact led to the questions underlying the present study. The questions concerned whether low self-esteem subjects would accept positive feedback if it were mixed with negative feedback and whether they would attend differentially to feedback about their performance compared to feedback about their personal characteristics.

The review of the literature on self-esteem and self-concept indicated that the two constructs are related. Self-esteem results form the evaluation process while self-concept concerns the individual's attitudes toward the evaluated self. Thus performance feedback may be related to self-esteem while personal feedback is more related to self-concept. A further concern of this study was whether the consistency theory prediction would hold when subjects were presented with mixed positive and negative messages. Four hypotheses concerning eye contact were derived from the consistency theory perspective. To test these hypotheses an investigation was designed in which eye contact behavior in various feedback situations was assessed.

The investigation was based on the assumption that eye contact performs a gatekeeping function. Thus the DEC scores were interpreted as indicating the degree to which the subjects permitted the feedback to enter their perceptual field. The predictions concerning the degree to which they would permit this were based on the self-esteem scores. The subjects in this study had low self-esteem scores and, based on Greene's findings, it was expected that they would not permit positive feedback to enter their perceptual field.

Merhabian (1967) has shown that people make eye contact during conversation with people they like. It is possible that the differences in eye contact scores in this study can be explained by the fact that some of the subjects liked the interviewer and others did not; this liking would, in turn, result in them making eye contact with the interviewer. Consistency theory holds that people are motivated to maintain a consistent self-image, whether it is good or bad. Since the subjects in this study all had low self-esteem, or a poor self-image, consistency theory predicts that they would like the interviewer if she gave them negative feedback because this was consistent with their self-esteem. This liking based on the negative message would result in increased eye contact with the interviewer. Need-fulfillment theory holds that people have a need for

a positive self image and are thus motivated to behave in ways that would enhance their self-esteem. Thus need-fulfillment theory predicts that the subjects in this study would like the interviewer if she gave them positive feedback.

Questions 3, 6, and 10 on the eleven item questionnaire were related to the subjects' feelings toward the interviewer. In order to test whether liking of the interviewer had any effect on the subjects' behavior the responses to these questions were added together to yield one score, the PQI score. Analysis of variance, (PQI x Feedback Condition) was carried out. There was only a slight difference between the groups (F=.61) and this difference was not statistically significant (p=.61), thus it was concluded that the subjects' feelings toward the interviewer did not affect their eye contact behavior. This finding supports Greene's (1978) contention that ". . . liking is not superior to gatekeeping in accounting for the eye contact data" (p. 66).

A second alternative explanation concerns the relationships between eye contact behavior and response to threat. Ellsworth and Carlsmith (1973) demonstrated that subjects who felt threatened increased their eye contact with the threatening person and, in doing so, succeeded in intimidating the other thereby reducing the threat. In this study evidence of increased eye contact might indicate that the subjects found the interview threatening. Questions 1, 4, 5, and 9 on the eleven item questionnaire related to the subjects' feeling about the experiment. To test whether the subjects' feelings about the situation affected their eye contact behavior the responses to these questions were added together to yield one score, the PQA score. Analysis of variance, (PQA x Feedback Condition) was carried out. The subjects who received negative performance feedback indicated less positive feelings toward the experiment than did those who received positive performance feedback (F-2.56) but this result was not statistically significant (p=.06).

Consistency Theory versus Need-fulfillment Theory

One of the stated purposes of this study was to provide further testing of

the predictions derived from consistency theory and need-fulfillment theory. Recall that consistency theory holds that people are motivated to maintain a consistent self-image regardless of whether it is positive or negative. Need-fulfillment theory, on the other hand, holds that people have a need for a positive self-image and that their behavior will be directed toward enhancing their self-esteem.

Following Greene's results, which indicated support for consistency theory with reference to predicting behavior in low self-esteem subjects, the hypotheses of this study were derived from the consistency theory perspective. The results pertaining to the subjects' eye contact behavior in response to four different feedback conditions were not statistically significant but they indicate a tendency for the subjects to attend to the negative feedback more than to the positive feedback. The results of this study lend weak support to Greene's finding that consistency theory is more appropriate for predicting eye contact behavior in low self-esteem subjects than is need-fulfillment theory because of the lack of statistically significant differences.

Considerable research has been carried out on this topic in the past resulting in support for both consistency and need-fulfillment theories. Stephen Jones (1973) reviewed sixteen of these studies and advanced arguments in support of need-fulfillment theory. Jones concluded that studies which supported consistency theory did so because of three methodological errors. First Jones distinguished between "warm" and "cool" studies. Warm studies are those in which the subjects are directly evaluated while cool studies are those in which the subjects are not directly involved but observe and report their impressions of others. Jones contended that cool studies are more likely to yield results in support of consistency theory because the subjects' own needs are not involved.

His second explanation concerned Jones' concept of "personalism." He contended that evaluations focused on the person himself would result in support for need-fulfillment theory while evaluations focused on external factors would produce results in support of consistency theory. Jones' third argument is that

studies in which the subjects anticipate the public revelation of their actual success or failure will increase their tendency to make apparently self-consistent responses.

In a critique of Jones' contentions Greene (1978) pointed out that the results of his study were in conflict with the first two predictions and noted that the third did not apply in the case of his study since the results of the subjects' performance were confidential. The same conclusions can be drawn in the present study. Greene went on to point out two methodological problems which he perceived as confounding the results of studies that support need-fulfillment theory. The first problem is that most of the studies used written responses as the dependent variable. He pointed out that in writing a response subjects will bring conscious strategies and compliance with norms into play. The second problem concerns reciprocity. The studies typically required the subjects to both give and receive feedback. Greene contended ". . . that the predictions we would make using a reciprocity model are the same as those we would generate using need-fulfillment theory" (1978, p. 62). Because of the extraneous variables present in written responses Greene contended that the use of eye contact as the dependent variable made his design superior to those used previously.

The results of this study seem to highlight the importance of selection of the dependent variables in experimental investigations, particularly those designed to investigate the relative merits of consistency theory and need-fulfillment theory as predictors of communicative behavior in subjects with various levels of self-esteem.

CONCLUSIONS

The results of the present study do not entirely support Greene's contentions. However, the differences between the results from the eye contact data and those from the written responses (the eleven item questionnaire) certainly bring the question of choice of the dependent variable into focus. At the intuitive level

it seems that the more spontaneous the dependent variable, the less likely there are to be extraneous variables which confuse the effect of the independent variable. Certainly Greene's results appear to support this contention.

Although the results of this study are ambiguous with respect to whether the subjects attended to the performance or personal aspects of the feedback, there is some indication that they tended to focus on the performance feedback. The slight preference the subjects in this study showed in attending to performance feedback may be due to the fact that they were all undergraduate students.

Notes

[1]The RSES, form A1, consists of five positively phrased and five negatively phrased items to which subjects respond by indicating one of four choices along a continuum from "strongly agree" to "strongly disagree." The scoring procedure developed by Rosenberg yields total scores ranging from 0 to 5. According to Rosenberg, a total score of 0 indicates high self-esteem, a total score of 1 or 2 indicates a medium level of self-esteem, and a score of 3, 4, or 5 indicates low self-esteem (Rosenberg, 1979).

[2]The Positive sub-scale (P) of the TSCS consists of 45 positively phrased and 45 negatively phrased self-descriptive items to which subjects respond by indicating one of five choices along a continuum from "completely false" to "completely true." The P sub-scale yields nine separate scores: three reflecting the respondent's internal frame of reference (Identity, Self-Satisfaction and Behavior), five reflecting the respondent's external frame of reference (Physical Self, Moral-Ethical Self, Personal Self, Family Self, and Social Self), and a Total score (Fitts, 1965).

[3]Two subjects appeared at the initial session wearing dark glasses; one appeared at the second session wearing dark glsses; one arrived too late to complete the activities of the second session; one dropped out of the study; one was out of town, and five failed to appear for the second session at the time they had agreed to.

[4]The Baseball Problem is an exercise in logic that provides information necessary to determine the names of players at each of the nine positions on a baseball team. A copy of the problem and the answer sheet are included in the appendix to this report.

[5]Copies of each of the five messages are included in the appendix to this report.

[6]Copies of the questionnaires are included in the appendix to this report.

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APPENDIX

APPENDIX A

The Baseball Problem

This problem is designed to test your powers of reasoning, skill in observation, and ability to deal with several pieces of information at once. As such it provides a measure of cognitive complexity.

Your task is to determine which position each member of the baseball team plays from the clues given below.

1. O'Reilly and Ruck each took 20 dollars from the pitcher at poker.
2. Phillips was taller than Collins and shorter than Simpson, but each weighed more than the third baseman.
3. The third baseman lived near Cohen in the same apartment.
4. Polan and the outfielders are pinochle sharks.
5. Simpson, Polan, Ruck, the right fielder, and the center fielder are bachelors; the rest are married.
6. Of Love and Collins, one was an outfielder.
7. The right fielder was shorter than the center fielder.
8. The third baseman was the pitcher's wife's brother.
9. Powell was taller than the infielders except for Cohen, O'Reilly, and Love.
10. The second basement beat Cohen, Ruck, Phillips, and the catcher at golf.
11. The third baseman, the shortstop, and Phillips each drove Fords.
12. The second baseman was engaged to Polan's sister.
13. Love lives in the same house as his sister, and he hates the catcher.
14. Love, Ruck, and the shortstop each have blond hair.
15. The catcher has three daughters, the third baseman has two sons, but Powerll is being sued for divorce.

You now have enough information to give the positions on the baseball team.

Answer Sheet

Place beside each position the name of the player who occupies it.

Pitcher--

Catcher--

First Baseman--

Second Baseman--

Shortstop--

Third Baseman--

Left Fielder--

Center Fielder--

Right Fielder--

Please indicate the position on the Strongly Agree-Strongly Disagree continuum which best approximates your response to each statement.

1. All things considered I think I did better than most people on the Baseball Problem.

   Strongly Agree ___ ___ ___ ___ ___ ___ ___ Strongly Disagree

2. I did more poorly on the Baseball Problem than I expected.

   Strongly Agree ___ ___ ___ ___ ___ ___ ___ Strongly Disagree

3. I estimate that I positioned ____ players correctly on the Baseball Problem.

APPENDIX B

NEGATIVE PERFORMANCE, NEGATIVE PERSONAL MESSAGE

Hello, would you sit here please? That's fine.

As you know the purpose of this meeting is to dis[illegible]s the experiment and your performance during the last session.

First, let me say that we think it's a goo[illegible]ea to let everyone know where they stand since studies have shown that uncertainty can lead to anxiety.

In particular I want to talk about your work on the Baseball Problem. You remember that was the problem in which you were given a number of clues and asked to determine which position each member of the team played.

I must say that your work during that session has led to some serious questions on our part which need some answers.

Frankly, I must say that you didn't do well on the task. You weren't able to complete it correctly in the time allowed. In fact you weren't close to solving the problem.

The problem was quite difficult but we don't feel it was so difficult that it could not be worked.

Your failure to solve the problem raises questions about your commitment to the experiment. We wondered if you really took the experiment seriously and applied yourself as well as you can.

Because of the nature of the problem your poor performance indicates you may have difficulty with cognitively complex tasks and difficulty in organizing data in order to make sense out of it.

Because we still have some tasks for you to complete, I can't give you any specific information about your score on the Baseball Problem or the correct procedures for working it; I'm sure you understand.

Now, we have a few more things for you to do and your part in this experiment will be over. First, we would like for you to fill out another questionnaire. This one sisn't very long and shouldn't require too much time. Please give the questions serious thought.

After you've completed that questionnaire there'll be another meeting to discuss the experiment and your part in it.

APPENDIX C

NEGATIVE PERFORMANCE, POSITIVE PERSONAL MESSAGE

Hello, would you sit here please? That's fine.

As you know the purpose of this meeting is to discuss the experiment and your performance during the last session.

First, let me say that we think it's a good idea to let everyone know where they stand since studies have shown that uncertainty can lead to anxiety.

In particular I want to talk about your work on the Baseball Problem. You remember that was the problem in which you were given a number of clues and asked to determine which position each member of the team played.

I must say that your work during that session has led to some serious questions on our part which need some answers.

Frankly, I must say that you didn't do well on the task. You weren't able to complete it correctly in the time allowed. In fact you weren't close to solving the problem.

The Problem was quite difficult but we don't feel it was so difficult that it could not be worked out.

However, the fact that you came and participated indicates you took the experiment seriously and gave your best. You indicate a high level of commitment to the experiment and a positive interest in assisting in communication research.

Because of the nature of the problem your staying with it indicates you are able to tackle cognitively complex tasks and can make an effort to organize data in order to make sense out of it.

However, we still have some tasks for you to complete, I can't give you any specific information about your score on the Baseball Problem or the correct procedures for working it; I'm sure you understand that.

Now, we have a few more things for you to do and your part in this experiment will be over. First, we would like for you to fill out another questionnaire. This one isn't very long and shouldn't require too much time. Please give the questions serious thought.

After you've completed that questionnaire there's be another meeting to discuss the experiment and your part in it.

APPENDIX D

POSITIVE PERFORMANCE, NEGATIVE PERSONAL MESSAGE

Hello, would you sit here please? That's fine.

As you know the purpose of this meeting is to discuss the experiment and your performance during the last session.

First, let me say that we think it's a good idea to let everyone know where they stand since studies have shown that uncertainty can lead to anxiety.

In particular I want to talk about your work on the Baseball Problem. You remember that was the problem in which you were given a number of clues and asked to determine which position each member of the team played.

I must say that you did very well on the problem.

As I expect you realize it is a difficult problem, too difficult to complete it in the time allowed, however you did very well in the time.

You got parts of it correct and, more important, you seemed to be on the right track.

We did, however, have some questions about your commitment to the experiment. We wondered if you took it seriously and whether you are really interested in communication research.

There were also indications you may have some difficulty with cognitively complex tasks and with organizing data in order to make sense of it.

Because we still have some tasks for you to complete, I can't give you any specific information about your score on the Baseball Problem or the correct procedures for working it; I'm sure you understand that.

Now, we have a few more things for you to do and your part in this experiment will be over. First, we would like for you to fill out another questionnaire. This one isn't very long and shouldn't require too much time. Please give the questions serious thought.

After you've completed that questionnaire there'll be another meeting to discuss the experiment and your part in it.

APPENDIX E

POSITIVE PERFORMANCE, POSITIVE PERSONAL MESSAGE

Hello, would you sit here please? That's fine.

As you know the purpose of this meeting is to discuss the experiment and your performance during the last session.

First, let me say that we think it's a good idea to let everyone know where they stand since studies have shown that uncertainty can lead to anxiety.

In particular I want to talk about your work on the Baseball Problem. You remember that was the problem in which you were given a number of clues and asked to determine which position each member of the team played.

I must say that you did very well on the problem.

As I expect you realize it is a difficult problem, too difficult to complete in the time allowed, however you did very well in the time.

You got parts of it correct and, more important; you seemed to be on the right track.

Your success in this situation seems to indicate you took the experiment seriously and gave it your best. You indicate a high level of commitment to the experiment and a positive interest in communication research.

Because of the nature of the problem your good performance indicates you may have no difficulty with cognitively complex tasks and that you are able to organize data in order to make sense of it.

Because we still have some tasks for your to complete, I can't give you any specific information about your score on the Baseball Problem or the correct procedures for working it; I'm sure you understand that.

Now, we have a few more things for you to do and your part in this experiment will be over. First, we would like for you to fill out another questionnaire. This one isn't very long and shouldn't require too much time. Please give the questions serious thought.

After you've completed that questionnaire there'll be another meeting to discuss the experiment and your part in it.

APPENDIX F

This is the neutral message delivered to all subjects in the initial interview.

Hello. Would you sit down here? That's fine.

I'm here to explain the study for which you've volunteered and to answer any questions which you may have.

First of all, let me make it clear that complete anonymity will be maintained throughout this investigation. In fact, no one involved with this study will ever know your name. You will be asked to sign an informed consent form, but this is only to satisfy University requirements and not for identification.

Instead, you have been given a number. This number is your identification. Please be sure to remember this number. That way we will know who you are when you return for the next session.

Because you will not be identified, I want to ask that you be as open and as thoughtful as possible as you participate in the experiment.

Also, if at any time you wish to drop out of the experiment, you may feel free to do so at any time. The same thing goes for any questions you are asked or any tasks you are asked to perform. If you don't want to answer the question or perform the task, then you certainly don't have to.

In this experiment we are interested in correlating certain personality variables with behavior. However, because of the possibility of biased results, we can't be any more specific at this time. During the second session the purpose of the study will be made clear.

The experiment, as you already know, will require two sessions, this one and one other, each about one-half an hour long. In each of these sessions you will be asked to fill out a number of short questionnaires and to perform some pencil and paper tasks.

We are required by the University to advise you of any discomforts or risks which are involved in this study, and while there are no risks, it is of course possible that the discussion of your performance may not be entirely pleasant.

Of course, the benefits of the study, both for you and communication scholars, make the study attractive. You will get to experience first hand the conducting of a social science experiment, and you will be introduced to theories of human motivation which you probably won't encounter in the classroom. In addition, the experiment will add to our knowledge of the process of human communication.

Now, when you leave here, you will be taken to a private room where you will find an informed consent form. Attached to it is much the same information I have told you here. When you are finished, give it to the experimenter there, and she will give you your instructions.

Now I'd like to ask once more that you do take the investigation seriously and carefully consider the answers you give to the questions which are asked.

Is there anything else?

Thank you for coming.

APPENDIX G

Post-Initial Interview Questionnaire

Instructions: Circle one answer for each question.
S.A. = Strongly agree; A. = Agree; D. = Disagree;
S.D. = Strongly disagree

1. I agreed to participate in this study because I want to learn about Communication research.	S.A.	A.	D.	S.D.
2. I think undergraduates should not be asked to participate in Social Science research studies.	S.A.	A.	D.	S.D.
3. I agreed to participate in this study because I shall get points for doing so.	S.A.	A.	D.	S.D.
4. I found it interesting to be a part of a Communication study.	S.A.	A.	D.	S.D.
5. I think undergraduates should be paid for participating in studies such as this one.	S.A.	A.	D.	S.D.
6. I consider participation in research projects an integral and useful part of my education.	S.A.	A.	D.	S.D.

If you have any further comments please write them below:

Before you leave today please check that you have an appointment for your second interview next week.

Thank you.

APPENDIX H

ELEVEN ITEM QUESTIONNAIRE

Please indicate the position on the Strongly Agree--Strongly Disagree continuum which best approximates your response to each statement.

1. I found participation in this experiment to be quite rewarding.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
2. All things considered I think I did better than most people on the Baseball Problem.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
3. I felt that the interviewer was unfair.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
4. I did not like filling out all of those questionnaires.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
5. I would like to participate in a similar experiment if I were asked.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
6. The instructions concerning my tasks were clear and explicit.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
7. I don't think I was very honest in completing the questionnaires.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
8. I did more poorly on the Baseball Problem than I expected.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
9. This experiment was a waste of time.
   Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
10. The experimenter who interviewed me seemed to me to be open and honest.
    Strongly Agree _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Strongly Disagree
11. I estimate that I positioned ____ plays correctly on the Baseball Problem.